Market Power In California's Wholesale Gasoline Market

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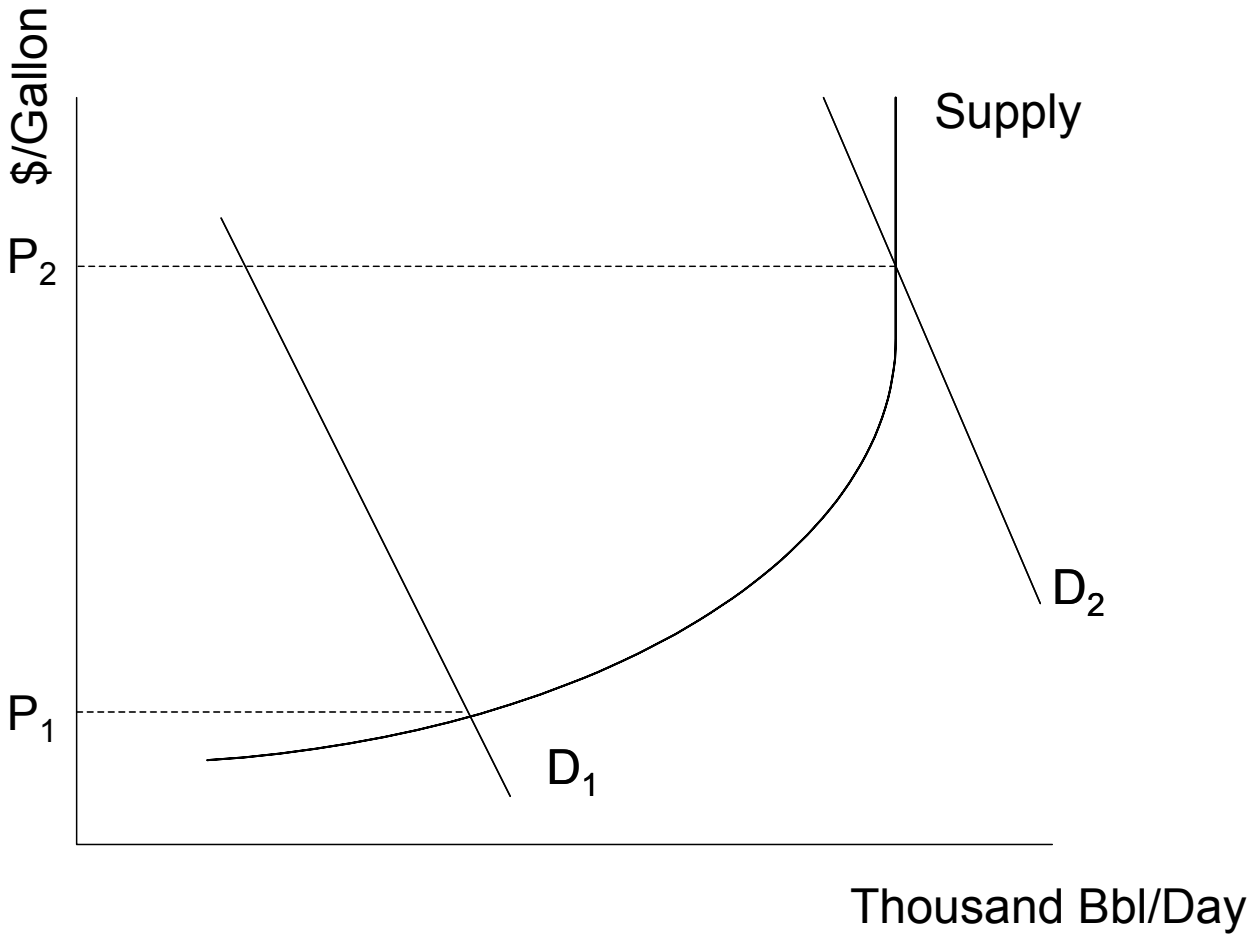
Basics of Scarcity in Gasoline Markets

- Over a wide range of production levels, marginal cost is fairly constant
- But as output approaches capacity MC rises rapidly, reflecting scarcity of capacity
  - Scarcity is part of complex refinery operation that combines many inputs and outputs
- "Basic Supply and Demand"
- In a tight refinery market, prices can fluctuate substantially without any market power
- CA refiners are running harder and producing a higher share of gasoline than in the past

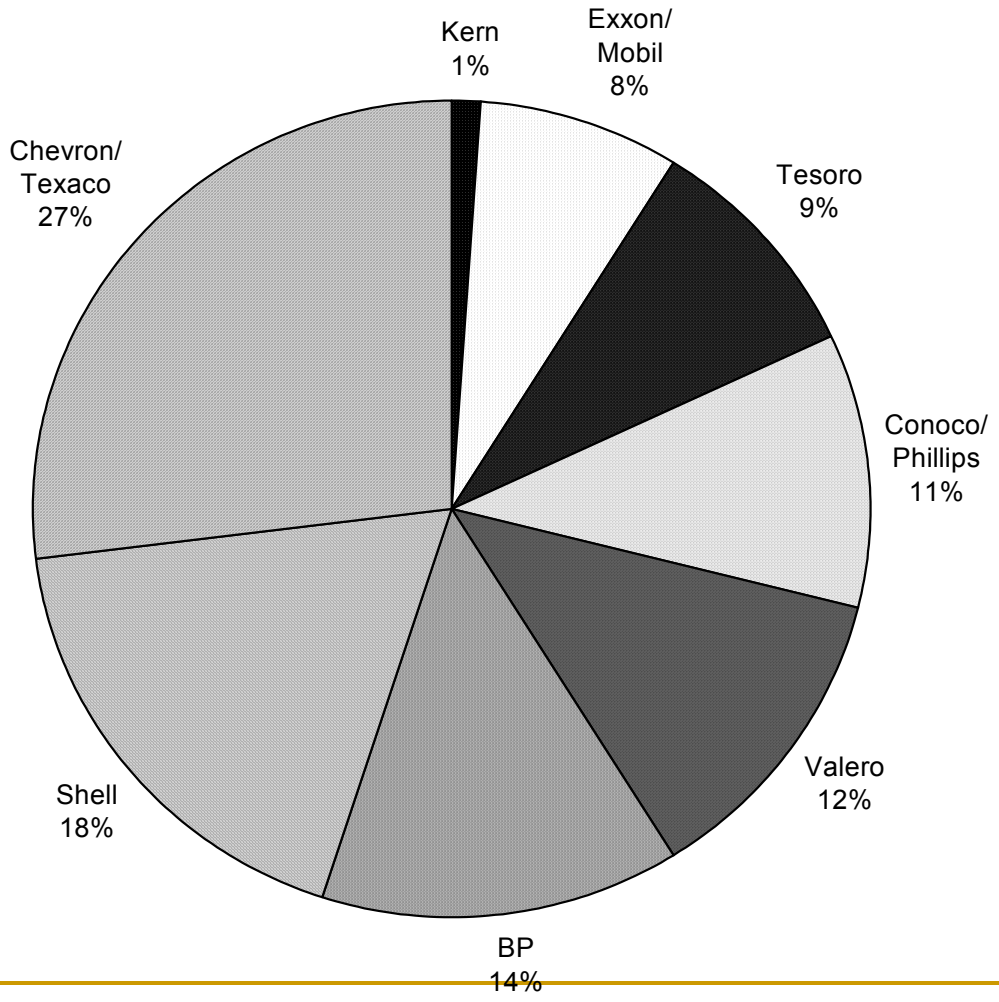
Basics of Scarcity in Gasoline Markets



Market Power is also basic economics

- Refiners solve complex optimization problems about how much oil to run and what product shares to output
  - They have substantial flexibility in trading off mix against production cost
- One aspect of this optimization is the price of each product
- If the firm has significant market share, it's production decision will affect the market price ==> Market Power
- It would be shocking it firms ignored this effect

Many California Gasoline Producers are Large Enough to have Market Power



Ability to Exercise Market Power Depends on the Residual Demand a Firm Faces

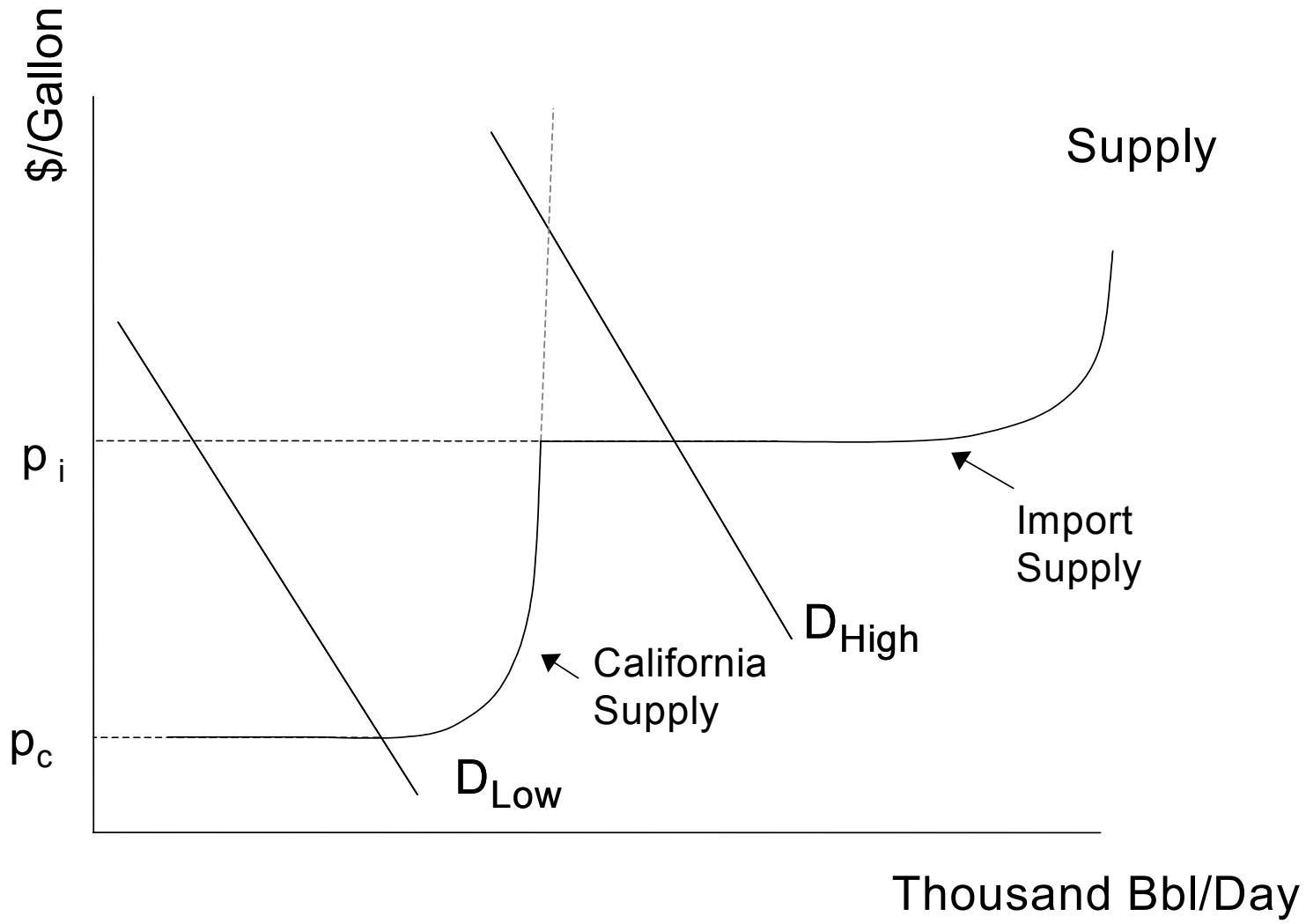
- If firm A reduces its output will
  - other refiners increase output to compensate?
  - buyers reduce their consumption to compensate?
    - How much will price have to rise to elicit these responses?
- Demand response is weak, short-run elasticity around -0.2
- Competitor response depends on whether they have slack capacity

The Role of Storage in Analysis of Scarcity and Market Power

- Storage helps to reduce the scarcity and market power impact of transitory supply/demand mismatches
- Absent any market power, storage efficiently reallocates scarce product across time periods, reducing production costs
- Competitive storage can undermine transitory market power of producers by reallocating product from periods with less market power
- But may be potential for market power in storage or barriers to entry in connecting storage to pipelines

Imports and Market Power

- Imports are source of additional supply BUT
  - more expensive due to transport costs
  - less responsive due to transport time
- In a competitive market, imports with transport costs limit the scarcity rents that in-state producers can earn
- In-state producers with market power may only be able to force price up to import level
- But interaction is more complex due to time lags
  - Less short run impact of imports (role of storage)
  - Potential for in-state producers to drop price when imports arrive, making imports unprofitable


$/Gallon
Supply
p_i
Import
Supply
D_{High}
California
Supply
p_c
D_{Low}
Thousand Bbl/Day

The Trouble with Regulating Gasoline Prices or Prosecuting "Gougers"

- Extremely difficult to diagnose market power, distinguish it from competitive behavior with differing expectations or abilities
- Costs of suppressing price below competitive level is disruption that is likely more costly than some market power
- Long run market power manifestations – not increasing capacity – very difficult to identify
- Antitrust laws do not prohibit unilateral exercise of market power

Possible Alternative Policy Responses

- State Strategic Fuel Reserve
- Change regulation of summer/winter fuel switchover
- Fee based CaRFG variance
- Intervene in Shell refinery closure
- State participation in long-term fuel markets